

## Section 1-3: Histograms and Stem-and-Leaf Plots

**By the end of this lesson, you should be able to answer:**

- How do you use and create histograms to solve problems?
- How do you use and create stem-and-leaf plots to solve problems?

**Where you might see this in the real world:**

- Education, statistics, inventory, sports, entertainment

Define the following words:

1. Frequency table
2. Histogram
3. Stem-and-leaf plot
4. Outliers
5. Clusters
6. Gaps

For sets of data, it is often helpful to organize the data into a graph. For the following set of data, create a frequency table.

13 25 43 50 23 33 31 24 54 11 3 26  
46 43 23 45 14 19 29 21 25 43 12 15

Score	1-7	8-14	15-21	22-28	29-35	36-42	43-49	50-56
Freq.								

Which interval has the most scores? The least?

Now use a graphing calculator to create a histogram. Enter the data from above into **L1**, as we have previously done. As a reminder, press **STAT** then **1:Edit...** and enter the values under **L1**. Once the values are entered, press the **WINDOW** button and enter the following values:

**x min = 1      x max = 60      x scale = 7**  
**y min = -1      y max = 10      y scale = 1**

Finally, press the **2<sup>ND</sup>** button then hit **STAT PLOT** (above **Y=**) and press **ENTER** for **1:Plot1...** Make sure to first highlight **On** to turn the plot on. For type, highlight the histogram and press **ENTER**. Make sure your **XList:** is set for **L1** (or whichever list you input your data into). Now press **GRAPH** and you have your histogram!

How many values are in the first bar?

How many values are in the second bar?

How many values are in the fourth bar?

Now we are going to create a stem-and-leaf plot with the same information. For a stem-and-leaf plot, the leaf is the digit in the place farthest to the right. The stem, then, is whatever is leftover.

13	25	43	50	23	33	31	24	54	11	3	26
46	43	23	45	14	19	29	21	25	43	12	15

Stem	Leaf
0	
1	
2	
3	
4	
5	

Answer on your own:

1. What is the difference between a histogram and a bar graph?

2. What would be the stem and leaf of the following number: 45.3

Problem Set:

"The secret of success in life is for a man to be ready for his opportunity when it comes."  
- Earl of Beaconsfield